In the claims as follows:

1.   (Currently Amended) Computer executable software and device for guiding brain activity training comprising:

   logic which takes data corresponding to activity measurements of one or more internal voxels of a brain and determines one or more members of the group consisting of: a) what next stimulus to communicate to the subject, b) what next behavior to instruct the subject to perform, c) when a subject is to be exposed to a next stimulus, d) when the subject is to perform a next behavior, e) one or more activity metrics computed from the measured activity, f) a spatial pattern computed from the measured activity, g) a location of a region of interest computed from the measured activity, h) performance targets that a subject is to achieve computed from the measured activity, i) a performance measure of a subject's success computed from the measured activity, j) a subject's position relative to an activity measurement instrument; and

   logic for communicating information based on the determinations to the subject in substantially real time relative to when the activity is measured wherein the information communicated is an instruction to the subject determined by a computer executable logic and is selected from a set of instructions stored in memory, the selection being based upon the brain activity measured and wherein the information is communicated by a manner selected from the group consisting of providing audio to the subject, providing tactile stimuli to the subject, providing a smell to the subject, displaying an image to the subject.

2.   (Original) The software and device according to claim 1 wherein measuring brain activity is performed by fMRI.

3.   (Original) The software and device according to claim 1 wherein the determinations are made in less than 10 seconds relative to when the activity is measured.

4.   (Original) The software and device according to claim 1 wherein the determinations are made in less than 1 second relative to when the activity is measured.

5.   (Original) The software and device according to claim 1 wherein the determinations are made in less than 0.5 second relative to when the activity is measured.

6.   (Original) The software and device according to claim 1 wherein the information is determined while the instrument used for measurement remains positioned about the subject.

7.   (Original) The software and device according to claim 1 wherein the activity measurements are made using a device capable of taking measurements from one or more internal voxels without substantial contamination of the measurements by activity from regions intervening between the internal voxels being measured and where the measurement apparatus collects the data.

8.   (Original) The software and device according to claim 1 wherein measurements are made from at least 100 separate internal voxels, and these measurements are made at a rate of at least once every five seconds.

9.   (Original) The software and device according to claim 1 wherein measurements are made from a set of separate internal voxels corresponding to a scan volume including the entire brain.

10.   (Original) The software and device according to claim 1 wherein the size of the internal voxels have a total three dimensional volume of 5x5x5cm or less.

11.   (Original) The software and device according to claim 1 wherein the size of the internal voxels have a total three dimensional volume of 1x1x1cm or less.

12.   (Original) The software and device according to claim 1 wherein the software further comprises logic for selecting one or more of the internal voxels to correspond to a region of interest for the subject and using the selected internal voxels of the region of interest to make the one or more determinations.

13.   (Cancelled)

14.   (Cancelled)

15.   (Original) The software and device according to claim 14 wherein the instruction is a text or iconic indication denoting an action that a subject is to perform.

16.   (Original) The software and device according to claim 14 wherein the instruction identifies a task to be performed by the subject.

17.   (Cancelled)

18.   (Cancelled)

19.   (Original) The software and device according to claim 1 wherein some of the information communicated to the subject is material to be learned.

20.   (Cancelled)

21.   (Cancelled)

22.   (Cancelled)

23.   (Cancelled)

24.   (Cancelled)

25.   (Cancelled)

26.   (Cancelled)